

# Global Advanced Phase Change Materials (PCM) Market Analysis and Forecast 2024-2030

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## Abstracts

### Summary

Phase change materials (PCMs) are substances with a high enthalpy of fusion, also known as latent heat, meaning they can store large quantities of heat energy as they change phase. When melting, they absorb heat and maintain the temperature of the environment at a certain value until completely molten. When the temperature of the environment falls below the crystallisation temperature, the PCM will start to solidify, releasing large quantities of heat and maintaining the temperature until completely solid.

Latent heat storage can be achieved through liquid→solid, solid→liquid, solid→gas and liquid→gas phase changes. However, only solid→liquid and liquid→solid phase changes are practical for PCMs. Although liquid→gas transitions have a higher heat of transformation than solid→liquid transitions, liquid→gas phase changes are impractical for thermal storage because large volumes or high pressures are required to store the materials in their gas phase. Solid→solid phase changes are typically very slow and have a relatively low heat of transformation.

Phase change materials are products that release or absorb heat when they change from one phase to another (usually from solid to liquid or vice versa). These materials store thermal energy in the form of latent heat, which is released when they freeze or crystallize and absorbed when they melt at their respective melting/freezing temperature points. Hence, they are used in a broad range of applications that require thermal control and management.

Based on the technology of the material used, advanced PCM are broadly categorized as inorganic PCM, organic PCM and Bio-based PCM.

According to APO Research, The global Advanced Phase Change Materials (PCM) market is projected to grow from US\$ million in 2024 to US\$ million by 2030, at a Compound Annual Growth Rate (CAGR) of % during the forecast period.

The US & Canada market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

Asia-Pacific market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

The China market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

Europe market for Advanced Phase Change Materials (PCM) is estimated to increase from \$ million in 2024 to reach \$ million by 2030, at a CAGR of % during the forecast period of 2025 through 2030.

The major global manufacturers of Advanced Phase Change Materials (PCM) include BASF, Honeywell, Cryopak, Entropy Solutions Inc., Climator Sweden AB, Phase Change Energy Solutions, Outlast Technologies, Dow Building Solutions and Chemours Company, etc. In 2023, the world's top three vendors accounted for approximately % of the revenue.

In terms of production side, this report researches the Advanced Phase Change Materials (PCM) production, growth rate, market share by manufacturers and by region (region level and country level), from 2019 to 2024, and forecast to 2030.

In terms of consumption side, this report focuses on the sales of Advanced Phase Change Materials (PCM) by region (region level and country level), by Company, by Type and by Application. from 2019 to 2024 and forecast to 2030.

This report presents an overview of global market for Advanced Phase Change Materials (PCM), capacity, output, revenue and price. Analyses of the global market trends, with historic market revenue or sales data for 2019 - 2023, estimates for 2024, and projections of CAGR through 2030.

This report researches the key producers of Advanced Phase Change Materials (PCM), also provides the consumption of main regions and countries. Of the upcoming market potential for Advanced Phase Change Materials (PCM), and key regions or countries of focus to forecast this market into various segments and sub-segments. Country specific data and market value analysis for the U.S., Canada, Mexico, Brazil, China, Japan, South Korea, Southeast Asia, India, Germany, the U.K., Italy, Middle East, Africa, and Other Countries.

This report focuses on the Advanced Phase Change Materials (PCM) sales, revenue, market share and industry ranking of main manufacturers, data from 2019 to 2024. Identification of the major stakeholders in the global Advanced Phase Change Materials (PCM) market, and analysis of their competitive landscape and market positioning based on recent developments and segmental revenues. This report will help stakeholders to understand the competitive landscape and gain more insights and position their businesses and market strategies in a better way.

This report analyzes the segments data by Type and by Application, sales, revenue, and price, from 2019 to 2030. Evaluation and forecast the market size for Advanced Phase Change Materials (PCM) sales, projected growth trends, production technology, application and end-user industry.

#### Advanced Phase Change Materials (PCM) segment by Company

BASF

Honeywell

Cryopak

Entropy Solutions Inc.

Climator Sweden AB

Phase Change Energy Solutions

Outlast Technologies

Dow Building Solutions

Chemours Company

PCM Energy Ltd

Rubitherm Technologies GmbH

### Advanced Phase Change Materials (PCM) segment by Type

Organic

Inorganic

Bio-Based

### Advanced Phase Change Materials (PCM) segment by Application

Building & Construction

Refrigeration

Consumer Goods

Others

### Advanced Phase Change Materials (PCM) segment by Region

North America

U.S.

Canada

Europe

Germany

France

U.K.

Italy

Russia

#### Asia-Pacific

China

Japan

South Korea

India

Australia

China Taiwan

Indonesia

Thailand

Malaysia

#### Latin America

Mexico

Brazil

Argentina

#### Middle East & Africa

Turkey

Saudi Arabia

UAE

### Study Objectives

1. To analyze and research the global status and future forecast, involving, production, value, consumption, growth rate (CAGR), market share, historical and forecast.
2. To present the key manufacturers, capacity, production, revenue, market share, and Recent Developments.
3. To split the breakdown data by regions, type, manufacturers, and Application.
4. To analyze the global and key regions market potential and advantage, opportunity and challenge, restraints, and risks.
5. To identify significant trends, drivers, influence factors in global and regions.
6. To analyze competitive developments such as expansions, agreements, new product launches, and acquisitions in the market.

### Reasons to Buy This Report

1. This report will help the readers to understand the competition within the industries and strategies for the competitive environment to enhance the potential profit. The report also focuses on the competitive landscape of the global Advanced Phase Change Materials (PCM) market, and introduces in detail the market share, industry ranking, competitor ecosystem, market performance, new product development, operation situation, expansion, and acquisition. etc. of the main players, which helps the readers to identify the main competitors and deeply understand the competition pattern of the market.
2. This report will help stakeholders to understand the global industry status and trends of Advanced Phase Change Materials (PCM) and provides them with information on key market drivers, restraints, challenges, and opportunities.

3. This report will help stakeholders to understand competitors better and gain more insights to strengthen their position in their businesses. The competitive landscape section includes the market share and rank (in volume and value), competitor ecosystem, new product development, expansion, and acquisition.
4. This report stays updated with novel technology integration, features, and the latest developments in the market.
5. This report helps stakeholders to gain insights into which regions to target globally.
6. This report helps stakeholders to gain insights into the end-user perception concerning the adoption of Advanced Phase Change Materials (PCM).
7. This report helps stakeholders to identify some of the key players in the market and understand their valuable contribution.

## Chapter Outline

Chapter 1: Introduces the report scope of the report, executive summary of different market segments (by type and by application, etc), including the market size of each market segment, future development potential, and so on. It offers a high-level view of the current state of the market and its likely evolution in the short to mid-term, and long term.

Chapter 2: Introduces the market dynamics, latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

Chapter 3: Advanced Phase Change Materials (PCM) production/output of global and key producers (regions/countries). It provides a quantitative analysis of the production, and development potential of each producer in the next six years.

Chapter 4: Sales (consumption), revenue of Advanced Phase Change Materials (PCM) in global, regional level and country level. It provides a quantitative analysis of the market size and development potential of each region and its main countries and introduces the market development, future development prospects, market space of each country in the world.

Chapter 5: Detailed analysis of Advanced Phase Change Materials (PCM) manufacturers competitive landscape, price, sales, revenue, market share and industry ranking, latest development plan, merger, and acquisition information, etc.

Chapter 6: Provides the analysis of various market segments by type, covering the sales, revenue, average price, and development potential of each market segment, to help readers find the blue ocean market in different market segments.

Chapter 7: Provides the analysis of various market segments by application, covering the sales, revenue, average price, and development potential of each market segment, to help readers find the blue ocean market in different downstream markets.

Chapter 8: Provides profiles of key manufacturers, introducing the basic situation of the main companies in the market in detail, including product descriptions and specifications, Advanced Phase Change Materials (PCM) sales, revenue, price, gross margin, and recent development, etc.

Chapter 9: North America (US & Canada) by type, by application and by country, sales, and revenue for each segment.

Chapter 10: Europe by type, by application and by country, sales, and revenue for each segment.

Chapter 11: China by type, by application, sales, and revenue for each segment.

Chapter 12: Asia (Excluding China) by type, by application and by region, sales, and revenue for each segment.

Chapter 13: Middle East, Africa, Latin America by type, by application and by country, sales, and revenue for each segment.

Chapter 14: Analysis of industrial chain, sales channel, key raw materials, distributors and customers.

Chapter 15: The main concluding insights of the report.



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